



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,025	10/22/2003	Jeonghee Yi	ARC920030026US1	6416

61642 7590 06/22/2010
LEONARD T. GUZMAN
IBM CORP., LAW DEPT., C4TA/J2B
650 HARRY ROAD
SAN JOSE, CA 95120-6099

EXAMINER

COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
----------	--------------

2626

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

06/22/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ARCIPL@us.ibm.com
manulele@us.ibm.com

Office Action Summary	Application No. 10/692,025	Applicant(s) YI ET AL.	
	Examiner MICHAEL C. COLUCCI	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10,12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10,12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04/12/2010 have been fully considered but they are not persuasive.

Argument (page 10 ¶ 3 & page 12 ¶ 2):

Art not teaching:

- “for each sentence referring to a feature term determining whether the sentence includes an opinion polarity about the feature term
- for each sentence having a feature term and an opinion term, parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said component”

Response to argument:

Examiner disagrees and maintains arguments. Please consider that, although the exact term opinion is not taught, Boguraev teaches the identification of words in relation to one another such as "Gilbert Amelio" and "new operating system". The reasons, and linguistic rationale, for the selection of these particular noun phrases as topical are essentially identical to the intuition behind "priest" and "Pope attack" being the central topics of the example in Table 1. The computational justification for the choices lies in the extremely high values of salience, resulting from taking into account a number of factors: co-referentiality between "Amelio" and "Gilbert Amelio", co-referentiality between "Amelio" and "His", syntactic prominence of "Amelio" (as a

Art Unit: 2626

subject) promoting topical status higher than for instance "Apple" (which appears in adjunct positions), high overall frequency (four, counting the anaphor, as opposed to three for "Apple"--even if the two get the same number of text occurrences in the segment), and boost in global salience measures, due to "priming" effects of both referents for "Gilbert Amelio" and "operating system" in the prior discourse of the two preceding segments. Compared to a single phrase summary in the form of, say, "Amelio seeks a new operating system", the overview for the closing segment comes close; arguably, it is even better than any single phrase summary.

Consider Table 1 of Boguraev, wherein a group of sentences is analyzed whereby identification of an opinion term and a feature term are identified, such as the pope "Juan Fernandez Krohn" and "looked furious" (Boguraev Col. 10 line 59 – Col. 11 line 14 & Table 1). Even if Boguraev somehow did not teach this, Paik would in fact teach this as well (Paik 2.7, 2.8, and 3.5).

Argument (page 10 ¶ 4):

Art not teaching:

- "for each sentence referring to a feature term determining whether the sentence includes an opinion polarity about the subject term

Response to argument:

Examiner disagrees and maintains arguments. For instance, consider that Chase teaches the *opinion* or emotion of words, that is the identification of 3 Denotative

Art Unit: 2626

Field Types 1. Term (i.e., Word or phrase/idiom) , 2. Specific denotative context and 3. Part of speech. For each record in the data base 12, one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning.

Further, consider that *fields* are further defined as the set of connotative fields 46 includes a block of one or more fields for each one of a plurality of emotional categories. In a best mode embodiment eight emotional categories have been identified, and thus, eight blocks of connotative fields are included. The number of fields comprising each block may vary. In one embodiment the number of fields in a given category corresponds to the maximum number of emotional descriptors for such category that may be associated with a given term and denotative context (i.e., with a database record) (Chase Col. 7 lines 20-60).

More precisely, Chase teaches that for each term where there is an entry, there is a check to see if the term has more than one denotative meaning. Where there is more than one denotative meaning, an appropriate one of the denotative meanings is

Art Unit: 2626

selected. The system evaluates the passage for positive emotional connotations, negative emotional connotations, global emotional connotations, human interest, connotations of power, connotations of activity and connotations of abstractness/concreteness. Dominant emotional connotations and dominant words also are specifically identified and ranked (Chase Abstract).

Argument (page 11 ¶ 2 & page 13 ¶ 1):

Art not teaching:

- “identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of- speech tag, and an associated opinion polarity
- identifying an opinion polarity associated with said feature term using the opinion dictionary”

Response to argument:

Examiner disagrees and maintains arguments. For instance, consider that Chase teaches the use of a dictionary with respect to the *opinion* or emotion of words, that is the identification of 3 Denotative Field Types 1. Term (i.e., Word or phrase/idiom) , 2. Specific denotative context and 3. Part of speech. For each record in the data base 12, one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field

Art Unit: 2626

is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning.

Further, consider that *fields* are further defined as the set of connotative fields 46 includes a block of one or more fields for each one of a plurality of emotional categories. In a best mode embodiment eight emotional categories have been identified, and thus, eight blocks of connotative fields are included. The number of fields comprising each block may vary. In one embodiment the number of fields in a given category corresponds to the maximum number of emotional descriptors for such category that may be associated with a given term and denotative context (i.e., with a database record) (Chase Col. 7 lines 20-60).

More precisely, Chase teaches that for each term where there is an entry, there is a check to see if the term has more than one denotative meaning. Where there is more than one denotative meaning, an appropriate one of the denotative meanings is selected. The system evaluates the passage for positive emotional connotations, negative emotional connotations, global emotional connotations, human interest, connotations of power, connotations of activity and connotations of abstractness/concreteness. Dominant emotional connotations and dominant words also are specifically identified and ranked (Chase Abstract).

Argument (page 13 ¶ 2):

Art not teaching:

- “deriving an opinion skeleton for each of the extracted opinion, thereby providing supporting details for this opinion”

Response to argument:

Examiner disagrees. Please see new rejection below, wherein Paik teaches for example:

CRC triple: The CRC triple, or simply CRC, is the basic unit/subgraph of information in CHESS. It consists of two concepts linked by a dyadic relation. For instance, the sentence, "Georgia O'Keefe is a painter" can be distilled into a CRC in which O'Keefe is the first, or subject concept, linked to painter, the second, or descriptive concept, by the relation "IS A." (Paik section 1.1).

Consider this teaching of Paik with respect to the present invention specification, that is “Referring again to Figure 1, at step 13, an opinion skeleton is generated for each extracted opinion to provide supporting details for the opinion. The opinion skeleton might be a binary expression (a B-expression) or a ternary expression (a T-expression). An example of a binary skeleton is . An example of a T-expression is <camera, take, excellent picture> (present invention specification pages 13-14).

Additionally, consider Paik with respect to the use of an *opinion* term in present invention specification pages 13-14, wherein Paik teaches:

"David Smith put off paying his 250 dollar telephone bill until it was overdue."

Paik's demonstrates identifying "David Smith" as a personal proper name, "put off" as a phrasal verb (a combination of a verb plus a preposition or an adverb), "250 dollar" as a monetary numeric concept, and "telephone bill" as complex nominal. "Paying" and "overdue" are each identified as single word concepts. "Put off" was identified by consulting the Conceptual Hierarchy database to determine its idiomatic meaning (Paik 2.8).

Paik improves the teachings of Chase to explicitly incorporate *emotion* (or opinion) into the construction of a the sub-structure known as CRC (i.e. a skeleton).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10, 12, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boguraev et al. US 6185592 B1 (hereinafter Boguraev) in view of Chase US 6332143 B1 (hereinafter Chase) and further in view of Paik et al. US 6076088 A (hereinafter Paik).

Re claim 10, Boguraev teaches a method for extracting opinions about a subject of interest from a text document having a plurality of sentences, the subject associated with a plurality of features (Col. 10 line 19 - Col. 11 line 26), the method comprising:

extracting from the document feature terms (Col. 5 lines 1-8) related to the features most relevant to the subject (Col. 10 line 19 - Col. 11 line 26);

for each sentence referring to a feature term (Col. 10 line 19 - Col. 11 line 26), determining whether the sentence includes an opinion polarity about the feature term; an

for each sentence referring to the subject (Col. 10 line 19 - Col. 11 line 26), determining whether the sentence includes an opinion polarity about the subject,

for each sentence having a feature term and an opinion term, parsing the sentence with an English parser (Col. 8 lines 9-32, tagged syntactic information streamed) to identify grammatical components in the sentence and relationships between said components (Col. 10 line 19 - Col. 11 line 26), and identifying an opinion polarity associated with said feature term using the opinion dictionary

However, Boguraev fails to teach determining whether the sentence includes an opinion polarity about the subject term and feature term

identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity

identifying an opinion polarity associated with said feature term using the opinion dictionary

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame).

Art Unit: 2626

Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4I lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate determining whether the sentence includes an opinion polarity about the feature term, identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity, identifying an opinion polarity associated with said feature term using the opinion dictionary as taught by Chase to allow for various fields within a dictionary (i.e. meaning,

Art Unit: 2626

context, parts of speech) (Chase Col. 7 lines 23-34), wherein stored emotional content is defined as 0 to n emotional connotations per record (or per term in the passage) whereby emotional connotations stored for each term in the database are associated with either a positive emotional category or a negative emotional category and displayed graphically (Chase Col. 11 line 45 – Col. 12 line 16 & Fig. 5-7).

However, Boguraev in view of Chase fails to teach the grammatical components including verb phrases, subject phrases, object phrases, complements, and prepositional phrases, each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary

deriving an opinion skeleton for each of the extracted opinion, thereby providing supporting details for this opinion

Paik teaches that each original and morphologically standardized (e.g., the plural form of a noun converted to the singular form and the past tense form of a verb converted to the present tense form) phrase candidate and phrasal verb candidate is checked against Conceptual Hierarchy database 117 until the match is found. If no match is found then the phrase or phrasal verb is not considered as a concept. The component words, which are open class words, of the phrase or the phrasal verbs are

Art Unit: 2626

considered as concepts. The following example illustrates how CHES identifies concepts in the sample sentence:

"David Smith put off paying his 250 dollar telephone bill until it was overdue."

CHES identifies "David Smith" as a personal proper name, "put off" as a phrasal verb (a combination of a verb plus a preposition or an adverb), "250 dollar" as a monetary numeric concept, and "telephone bill" as complex nominal. "Paying" and "overdue" are each identified as single word concepts. "Put off" was identified by consulting the Conceptual Hierarchy database to determine its idiomatic meaning. Conceptual Hierarchy database 117 maps related words and terms (synonyms) into a single concept cluster. The database differentiates between phrases as concept units and single term concepts. The concepts are organized as a hierarchical set of relations in the database (Paik Col. 12 lines 45-67).

Further, Paik teaches rules that map a meaning to both verb and other grammatical elements, wherein Paik maps syntactic relations such as "subject of the transitive verb" to their semantic functional equivalents so that a subject of a verb might be described as "agent of the action" of a verb. For example, in the sentence "Mr. MacGregor hoed his lettuce patch," Mr. MacGregor is the subject of the transitive verb "to hoe," and this is mapped to the semantic relation which describes Mr. MacGregor as "Agent" of the action. Rules for mapping to semantic relations are contained in Mapping Rule Base 212 (Paik Col. 17 line 60 – Col. 18 line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev in view of Chase to incorporate grammatical components including verb phrases, subject phrases, object phrases, complements, and prepositional phrases, each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary and deriving an opinion skeleton for each of the extracted opinion, thereby providing supporting details for this opinion as taught by Paik to allow for the relational mapping of verb and subject for instance (Paik Col. 17 line 60 – Col. 18 line 5), wherein if no matching element is identified the concept of a phrase is extracted based on other elements separate from the non-matching element, and the meaning still derived into a cluster concept, whereby a verb or another element will relate to define a concept (Paik Col. 12 lines 45-67).

Re claim 12, Boguraev fails to teach the method as recited in claim 10, wherein the opinion polarity associated with the feature term is identified based on an opinion rule.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary

Art Unit: 2626

definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given

Art Unit: 2626

emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 41 lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the opinion polarity associated with the feature term is identified based on an opinion rule as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 41 lines 9-36).

Re claim 14, Boguraev fails to teach the method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a target of the opinion, and a polarity of the opinion.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a

Art Unit: 2626

given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 41 lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the rule base comprises a plurality of rules each having a relationship term, a target of the opinion, and a polarity of the opinion as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 41 lines 9-36).

Re claim 15, Boguraev fails to teach the method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a source of the opinion, and a target of the opinion.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 41 lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the rule base comprises a plurality of rules each having a relationship term, a source of the opinion, and a target of the opinion as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 4I lines 9-36).

Re claim 16, Boguraev fails to teach the method as recited in claim 15, wherein the target of the opinion is a component of the sentence to which the opinion is to be assigned.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the

Art Unit: 2626

English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4l lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the target of the opinion is a component of the sentence to which the opinion is to be assigned as taught

Art Unit: 2626

by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 41 lines 9-36).

Re claim 17, Boguraev fails to teach the method as recited in claim 15, wherein the source of the opinion is a component of the sentence of which opinion polarity is to be assigned to the target.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative

Art Unit: 2626

emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 41 lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the source of the opinion is a component of the sentence of which opinion polarity is to be assigned to the target as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to

Art Unit: 2626

one another allows for the proper identification of emotion/opinion of a document
(Chase Col. 4I lines 9-36).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

Art Unit: 2626

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael C Colucci/
Examiner, Art Unit 2626
Patent Examiner
AU 2626
(571)-270-1847
Examiner FAX: (571)-270-2847
Michael.Colucci@uspto.gov

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626